

CLAIMS

1. A method of forming a product of a metal-based composite material, characterized by comprising:

5 the step of preparing a billet of a metal-based composite material by mixing a metal matrix and a ceramic reinforcing material;

the step of heating the billet to a specific temperature; and

the step of pressure forming the heated billet in a die assembly, so that the billet may have a compression ratio H/h_1 differing from one portion of the
10 formed product to another to give the formed product a ceramic volume content differing from one portion to another, where H is the height of the billet prior to forming and h_1 is its height after forming.

2. The method of claim 1, wherein the billet has a height varying from one
15 portion to another.

3. The method of claim 1, wherein the pressure forming employs a split die assembly.

20 4. The method of claim 1, wherein the pressure forming employs a die assembly having heat insulation in its portions contacting the billet.

5. The method of claim 1, 2, 3 or 4, wherein an aluminum alloy is employed as the matrix, and an alumina aggregate as the ceramic.

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6. The method of claim 1, wherein the step of heating is carried out for heating the billet to or above 580°C.